

Title (en)

End face light-emitting-type LED, end face light-emitting-type LED array and methods of manufacturing them

Title (de)

Lichtemittierende Diode mit Kantenemission, Anordnung einer lichtemittierenden Diode mit Kantenemission und Herstellungsverfahren

Title (fr)

Diode électroluminescente du type à émission latérale, matrice de diode électroluminescente du type à émission latérale et méthode de fabrication

Publication

EP 0779667 A3 19990519 (EN)

Application

EP 96119979 A 19961212

Priority

- JP 32591895 A 19951214
- JP 31587396 A 19961127

Abstract (en)

[origin: EP0779667A2] An end face light-emitting-type LED has a first-conductive-type semiconductor substrate and a second-conductive-type diffusion region formed on a first surface of the first-conductive-type semiconductor substrate so as to have a depth within a predetermined value. The first-conductive-type semiconductor substrate has a second surface which meets the first surface at a predetermined angle with the first surface. A junction between the first-conductive-type semiconductor substrate and the second-conductive-type diffusion region includes an inclined portion with regard to the first surface in the vicinity of an edge portion of the junction which is on a side of the second surface, and light emerges from the junction via the second surface. <IMAGE>

IPC 1-7

H01L 33/00; **H01L 27/15**

IPC 8 full level

H01L 33/00 (2006.01); **H01L 33/08** (2010.01); **H01L 33/16** (2010.01); **H01L 33/30** (2010.01); **H01L 33/58** (2010.01)

CPC (source: EP US)

H01L 33/0008 (2013.01 - EP US); **H01L 33/20** (2013.01 - EP US); **H01L 33/24** (2013.01 - EP US)

Citation (search report)

- [DA] PATENT ABSTRACTS OF JAPAN vol. 014, no. 357 (M - 1005) 2 August 1990 (1990-08-02)
- [A] PATENT ABSTRACTS OF JAPAN vol. 095, no. 001 28 February 1995 (1995-02-28)
- [A] PATENT ABSTRACTS OF JAPAN vol. 095, no. 002 31 March 1995 (1995-03-31)
- [A] PATENT ABSTRACTS OF JAPAN vol. 005, no. 082 (E - 059) 29 May 1981 (1981-05-29)
- [A] PATENT ABSTRACTS OF JAPAN vol. 018, no. 177 (M - 1582) 25 March 1994 (1994-03-25)

Cited by

FR2765422A1; US7205578B2; WO0161764A1; US6730939B2; US7195942B2

Designated contracting state (EPC)

DE GB NL

DOCDB simple family (publication)

EP 0779667 A2 19970618; **EP 0779667 A3 19990519**; JP 3176856 B2 20010618; JP H09223818 A 19970826; US 5869848 A 19990209

DOCDB simple family (application)

EP 96119979 A 19961212; JP 31587396 A 19961127; US 76241796 A 19961209